Psychological Intervention for 9/11 Military Mental Health Responders

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Introduction

Problem Overview. An abundance of literature addressing the issue of secondary stress as a form of psychological distress has been researched in recent years.[1] However, only a small part of this growing research represents empirical investigations of secondary traumatic stress (STS) and its implications.[1] Among the adverse mental health consequences of catastrophic traumatic events is the risk related to the development of post-traumatic stress disorder (PTSD) in the responder population. Other risk factors for PTSD, including patient trauma exposure and patient PTSD, can also contribute to the experience of secondary trauma.[2,3]

The Problem. In the wake of the September 11th terrorist attack on the Pentagon and World Trade Center (WTC), this investigation seeks to examine the associations of *secondary stress* in the form of psychological distress in military mental health responders involved in combat and operational stress prevention activities after critical incidents. The STS can be defined as, "the natural, consequent behaviors and emotions resulting from knowledge about the traumatizing event experienced by a significant other."[4, p10] A growing body of literature reports on the risk factors, reactions, and prevention of harm to professionals from exposure to another's traumatic material.[5] The majority of this literature is conceptual in nature, or reports only anecdotal evidence of the phenomenon.[6] To date, only one pilot study has been done with instruments sensitive enough to capture secondary stress in specifically mental health providers.[7] In the past, instruments that collected data for the purpose of observing the phenomenon of secondary stress were done with instruments designed to look at PTSD or primary acute trauma.[7]

This article considers the *specific outcome of secondary stress* in relation to factors associated with traumatic exposure – namely, responder STS and responder psychological distress. There is evidence linking trauma exposure in patients to increased prevalence of PTSD-like symptoms in responders following exposure to trauma via their patients.[8] Paramount to this study is the population being examined. The responder population, more specifically the mental health responder population, represents one of the most understudied, yet perhaps affected groups associated with traumatic events. These previously forgotten people have not received adequate exploration within the field of traumatology. This will be the first study of its kind to measure a difficult to reach sub-group of this forgotten population – military mental health responders.

Pertinent to *military mental health*, understanding the military-induced soldier and family stressors brought about from combat and operational stress control operations is critical to the development of the social work officer's role in developing combat and critical event stress prevention programs, treatment services, and family support programs.[9] In general, *social work research and practice* will benefit from the findings of this study because the diversity and severity of potential consequences is alarming. These consequences serve to highlight some major social problems such as child maltreatment, suicide, and other violent deaths among responders and alcoholism and its related problems responders.[8,10,11] Since providing intervention to traumatized clients is an integral function of social workers, they are at potentially the same risk as other responder populations for these alarming problems. One of the implications for this study is to begin to address how to take care of the caregivers. This will be followed by an examination of some of the problems and syndromes often hidden by the responder community. These problems are part of the STS syndrome this investigation intends to define and suggest interventions for.

Disaster

The idea of disaster dates to 3,000 years before the Common Era. Cities such as Ur, Jericho, and other ancient city-states were located in an area of ecological and social instability. However, the relationship between communities and disaster is not simply a historical or archeological interest. Since these early enclaves, communities have been faced with the same problems as the personnel at the Pentagon on September 11th, that of disaster response.

There is no model disaster and no model terrorist response. Interventions and outcomes can be war-gamed and responses to disaster rehearsed for different contingencies; however, these exercises will only serve as templates for action and response. Contingency planning efforts give responder organizations and communities guidelines or structures within which their behavior can be directed toward some expected outcome such as restoration of functioning of community infrastructures.[12] These guidelines are analogous to coloring books. Because there is no model disaster, each event has its own unique characteristics. Therefore, responders must color in the pictures between the lines differently for each contingency. The contingencies the military most typically responds are weather, war, and terrorism. This investigation will look at the terrorist attack on the Pentagon.

Terrorism - "Kill one person, frighten 10,000"
(*Chinese proverb*)

After the harrowing events of 11 Sep 01, the world is a very different place in many respects. Unfortunately, because of the focus of terrorism, to make the general population feel unsafe and thereby bring attention to their cause, fighting this nemesis requires efforts on many fronts. However, terrorism is not a new phenomenon. Here is a terse look at some of the major terrorist events in history. As early as 66 AD, terrorist acts have been recorded beginning with the Zealots that fought against their Roman occupiers. Shiite Muslims fought against Christendom during the Crusades from 1090 to 1275 and coined the terms "assassins." These early acts were born out of resistance to occupation.[13]

The word "terrorism" was first used in 1795, a grim result of the heady period that brought the American War of Independence and the French Revolution. The word was born with the Reign of Terror, the use of the guillotine by the French revolutionaries to consolidate their regime by killing their enemies and intimidating the potential opposition.[14] The U.S. State Department defines terrorism as, "The unlawful act of force or violence against individuals or property to coerce or intimidate governments or societies to achieve political, religious, or ideological objectives."[13]

With the end of the 6-Day War in 1967, the end to waging conventional warfare with Israel, began a new era in terrorist activity with ripple effects still felt today. Groups such as the Palestine Liberation Organization, Hezbullah, and Al Quaeda have been targeting U.S. and western interests since then beginning with the first "Air Terrorism" in 1968 and the Munich Olympics in 1972. By the 1980's, a series of embassy attacks, bombings, and kidnappings impacted U.S. military personnel from Beirut to West Germany. By 1990, the U.S. became concerned about a shift in terrorist activity from attention-seeking incidents to Weapons of Mass Destruction (WMD) events such as with the Sarin Gas Bombing in a Tokyo subway. There is an accumulating psychological impact from recent experiences with WMD. This sense of psychological vulnerability began with the first WTC bombing (1993), the Oklahoma City Bombing (1995), the Khobar Towers (1996), the U.S. Embassy bombings (1998), the USS Cole (2000), and culminated with the September 11th attack on the WTC (2001).

Responders

Literature Review.

Until recently, it was thought that trauma workers, because of their special training, were immune to traumatic stress reactions and symptoms, but as early as World War II there was evidence to the contrary that this was a myth. Vedder noted the impact of secondary stress in physicians at Iwo Jima in his comments about doctors in distress.[15] However, observations like Vedder's went largely ignored. In 1978, Figley suggested that family, friends, and professionals are susceptible to developing traumatic stress symptoms from being empathetically involved with victims of traumatic events.[16] Since then, several authors have argued that traumatic stress symptoms are contagious and can produce similar effects

in those who work with trauma victims.[17-36] Literature from responder agencies suggests as many as 100% of the police, emergency medical service, and firefighters would be listed as "disabled" – meeting the criteria for lifetime PTSD.[37] It is now hypothesized that as many as 35% of emergency responders actually meet criteria for PTSD.[38] Two studies appear to confirm this hypothesis. In one involving social work responders, 37% of Child Protective Service Workers were found to have symptoms of STS.[39] A second study of police involved with the Sun Valley aircraft accident (plane hitting shopping mall) found that 37% of police responders met PTSD criteria, 46% after 6 months, 35.9% after 12 months, and 46% after 18 months.[40]

Research in the area of secondary trauma has produced several generalizations about the effect of working with the traumatized person. First, professionals who work with traumatized persons can exhibit the same range of symptoms as victims. Second, the longevity and severity of these symptoms will vary with the individual. Third, professionals working with trauma victims are more likely to exhibit symptoms if they have been personally traumatized than if they had not that experience. This section summarizes the studies that have examined these three areas.

First, researchers have found that professionals exposed to traumatic material experience the same array of traumatic stress symptoms as those reported by victims of traumatic events.[17,19,20,22,25,28,31,41,42] Disturbed sleep, anger, fear, suppression of emotions, nightmares, flashbacks, irritability, anxiety, alienation, feelings of insanity, loss of control, and suicidal thoughts have been experienced by crisis workers and therapists flowing exposure to trauma victims.

Second, a number of researchers have reported that similar to primary victims, the longevity and severity of symptoms professionals experience varies from person to person. In particular, researchers have found a positive correlation between longevity of career, large caseloads, increased contact with clients, and long work hours and the longevity and severity of STS symptoms.[17,19,25,26,43-51] For example, in her study of distress among therapists who were indirectly exposed to trauma, Chrestman reported a relationship between increased professional experience, the number of clients in the therapists' caseloads, and increased STS symptoms.[44] She also reported a relationship between higher percentages of time spent at work and an increase in avoidance symptoms in therapists. Similarly, in Hodgkinson and Shepard's study of British social workers who provided support to primary victims of the Piper Alpha North Sea Oil Platform explosion, the authors found a significant relationship between the number of years on the job and Symptomatology.[25] In their study of police officers, firefighters, paramedics, emergency medical technicians (EMTs) and California highway department workers who responded to the Loma Prieta earthquake, Marmar et al found working long shifts with few breaks and harsh climactic conditions were associated with greater depersonalization, memory disturbances, altered body image experiences, and altered time sense in workers.[47]

Third, factors other than exposure have also been found to have an impact on the severity of STS symptoms in workers. Researchers have determined that workers who have experienced a personal trauma are more likely to suffer from severe STS symptoms than workers who did not have a personal trauma history.[29,45,47,49,52,53] Moran and Britton surveyed 210 Australian State Emergency Service and Volunteer Bushfire Brigade Unit workers.[49] The authors reported that workers who had had a personal trauma history experienced higher levels of STS symptoms after responding to disaster than those without history. Kassam-Adams reported a relationship between therapists' personal trauma history and severity of STS symptoms while Follette et al determined both mental health and law enforcement professionals with personal trauma histories had significantly higher levels of trauma-specific symptoms than professionals not reporting prior traumas.[45,52]

Studies concerning secondary exposure to traumatic material have focused primarily on the traumatization of traditional emergency responders (paramedics, firefighters, EMTs, police officers, and rescues workers). Military mental health SPRINT Teams, Combat Stress Control Teams, and Family Support Center Personnel are just as likely as crisis responders to be directly exposed to a number of operational or natural critical events on a daily basis or throughout their careers. While responding to the September 11th attack on the Pentagon, military mental health responders learned graphic details of the catastrophic events that shook not only their patients, but

their nation, their neighbors, and coworkers as well. These responders were placed at ground zero of an event in a compromising situation that exposed them to physical harm or emotional harm, thus increasing exposure to possibly traumatic stressors.

Military Responders.

For military mental health responders, disaster mental health has distinctive features that make it stressful. These features are related to the work itself, the unique role of the mental health professional, the transmission of vicarious or secondary stress from victim to responder and the fact that the responder is also a member of the organization often in which the crisis takes place.

The military combat stress control community emphasizes intervention using the principle of Proximity, Immediacy, Expectancy, and Simplicity. After a disaster such as the Pentagon attack, there is the urgency and immediacy of the response. The disaster response is usually one of outreach, in which the combat stress teams have little control over many aspects of the situation – when it happens, what the environment will be like, who will be affected, and what specific functions will be necessary to gain command and control of the response. Often there is little notice of sudden critical events, no time for preparation, and a limited amount of time for individual interventions. Despite the protocols set forth in FM 8-51, *Combat Stress Control in a Theater of Operations*, in the wake of the traumatic event, the mass volume of the work, both in terms of number of casualties requiring attention in any one scenario and in terms of successive traumatizing information coupled with the fact that the responders may be victims of the disaster themselves, can have a debilitating effect.[54] In addition, the intensity of the emotions present, the overall military response is typically high, the victims are often regressed, and a large amount of energy on the part of the military mental health responder is exerted to contain them.

Secondary stress effects are of particular significance in crisis intervention because they are insidious in nature. It is difficult to imagine that a person who has not been exposed to the traumatic events themselves may exhibit the features of an acute stress reaction or PTSD, yet subjectively, it seems many responders do indeed present as if they themselves had been traumatized after repeated disaster and operational interventions.

The stresses of the military environment are distinctive and significant. There is always the threat of deployment and combat, long and arduous training missions, and separations from families.[55,56] As stressful as combat may be, a growing amount of literature suggests that military operations other than war and military domestic responses to disaster and terrorist activities may have as deep an impact on a soldier as combat. Particularly since the terrorist attacks on the U.S. in mid-September of 2001, a significant portion of the U.S. population are directly impacted by exposure to traumatic events. These kinds of events are highlighted, but not limited to the attack on September 11th. Traumatic exposures can include child sexual and physical abuse, sexual and physical assault in adulthood, violent crime, natural and vehicular disasters and sudden, unexpected death. Several epidemiological studies have been conducted since 1995 and they estimate a lifetime prevalence of exposure to traumatic events with a range from 40% to 81% – meaning that a large portion of the general population may suffer from the deleterious effects of traumatic events.[57-59] In the period between 1967 and 1991, averages of 17,000,000 people living in developing countries and 700,000 in developed countries were affected by disasters each year.[60]

A number of PTSD articles concern themselves with the unique psychological aspects of peacetime military duties.[61-65] Moreover, there has been a proliferation of articles in the last 5 years on childhood and familial risk for PTSD suggesting that anyone repeatedly exposed to persons with PTSD symptoms may develop those symptoms. There is also vast literature that looks at the adverse mental health consequences of childhood trauma and the risk related to the development of PTSD in adulthood. For example, 25% of Bosnian youth who witnessed combat and were later relocated to the U.S. had PTSD.[66]

Four databases, Galileo, Biomednet, Psychoinfo, and PILOTS were systematically searched using the following keywords: secondary trauma, STS, multigenerational trauma, and psychotraumatology.[1,67-70] The search results yielded nearly 125 journal articles, books, and doctoral dissertation abstracts. The PILOTS catalogue further yielded over 16,000 articles on PTSD alone. To date, both retrospective and prospective studies have demonstrated that individuals exposed to childhood trauma, specifically, physical abuse and neglect and sexual abuse, are more likely to show symptoms of PTSD than adults who do

not.[3] The impact of vicarious stress can be seen in other populations associated with trauma. These earlier works include studies of abused children and spouses, and studies of populations of family members associated as secondary trauma victims with relationships to combat veterans, holocaust survivors, firefighters, emergency service responders, and law enforcement officials.[37,71-74] The literature on these groups suggested the existence of an STS practice theory and the evidence for a secondary traumatization process from which a research hypothesis pertaining to responders could be developed.[1] Both the theory and process are integrated positions that were built on multiple factors and pathways analogous to PTSD, a diagnosis built on factors and pathways of other disorders.

Normal Response Syndromes

Between 1984-1994 there were 284 Presidentially declared disasters and eight National Emergencies within the U.S. Federal Emergency Management provided funding to 553,835 people during this same period.[75] Meichenbaum estimated there are about 17 million people in North America alone who are exposed to trauma and disaster each year.[76] Of those exposed, a significant number will develop chronic PTSD.[77] The PTSD is but one normal reaction to an abnormal event. The table details these other normal response syndromes. One study of police summarizes the findings both in the military and civilian responder communities despite the number and type of incidents that these responders have become familiar with. Following a police shooting, the impact on the rest of the force indicated that 80% of officers noted some levels of emotional distress and increases in chronic manifestations of stress such as relationship problems, gastrointestinal problems, and substance abuse.[19,78] Unfortunately, it might indeed be the growing familiarity with critical events and disasters that have a cumulative effect on the responder.

Drugs, Alcohol, and Counseling Needed for Responders

Civilian Responders. The Oklahoma Gazette, 19 Jan 99, indicated some alarming effects among the Oklahoma City bombing rescuers. Increased alcohol use, increased retirements and/or resignations, increased domestic violence and a significant increase in post-traumatic Symptomatology have been documented. These individuals are entering the 3 to 5 year window, post trauma, which seems to be a critical period for rescue workers in incidents of this magnitude.[79] Among those involved in the rescue and prosecution process, there have been 30 successful suicide interventions of local firefighters and their families. There were approximately 12,000 bombing rescue workers and over 66% of them reported handling body parts. Of the 50 rescue dog handlers who participated in the recovery process, seven of the first 10 who responded to the site of the bombing have since left the search and rescue service. In addition to rescue workers, others who have been caught in the endless ripple effects, FBI investigators to reporters, have needed counseling. Some 9,600 people in the Project

Physical Signs	Mental and Emotional Signs
- Tension: aches, pains, tremble, fidget, fumble things - Jumpiness: startle at sudden sounds or movement - Cold sweat; dry mouth; pale skin; eyes hard or focus - Pounding heart: may feel dizzy or light-headed - Feel out of breath too much until fingers and toes start to tingle, cramp, and go numb - Upset stomach; vomiting - Diarrhea or constipation; frequent urination - Fatigue: feeling tired or drained; takes an effort to move - Distant or withdrawn	- Anxiety: keyed up, worrying, expecting the worst - Irritability: swearing, complaining, easily bothered - Loss of concentration; difficulty paying attention, remembering things - Difficulty communicating, thinking and speaking - Insomnia; trouble getting to sleep, awakened by intrusive dreams - Grief: tearful, crying for injured and dead - Feeling badly about mistakes or interventions taken - Anger: feeling let down by leaders, others, or frustrated by limits of what could be done - Loss of confidence in self and other

Table. Stress Symptoms in Responders: Similarities to Battle Fatigue Casualties[56]

Heartland Center have been counseled for the Oklahoma City bombing since 1995.

Military Interventions. Peacekeeping and disaster response frequently expose soldiers to dangerous, provoking, or even humiliating situations. These troops have limited possibilities to express resulting anger, confusion, trauma, and frustrations. Self-medication with alcohol and drugs is often the only solution to calm down, lessen the effects of acute stress reactions, and continue the mission and cope simultaneously. In one study with nearly 900 UN peacekeeping veterans, 43.5% of the soldiers indicated they increased their alcohol or drug consumption.[11] However, these same soldiers were unaware of the symptoms they exhibited. Only a small minority gave reasons such as tension, restlessness, anxiety, and stress to explain the increase. The only exception to this was soldiers who experienced a pathological level of symptoms, reaching clinically significant levels of distress. These markedly distressed veterans cited trauma as the reason for increased alcohol consumption. In the end, Mehlum found that UN peacekeepers exhibited a 96%-115% increase in alcohol consumption after tours of dangerous duty and 15%-31% reported symptoms associated with PTSD.[11] To prevent the outcomes of increased self medication and combat and operational stress reactions, part of doctrinal prevention activities must focus specialized education and stress inoculation activities for disaster or peacekeeping missions.

PTSD and STS

Post Traumatic Stress Disorder. As mentioned before, the deleterious impact of experiencing catastrophic events has been catalogued for centuries, however, it was not until the third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-III APA, 1980) that the first formal recognition of a specific syndrome of symptoms etiology was associated with critical incidents. The inclusion of diagnostic criteria in the manual provided a standard of care and a clinical picture for assessment of the impact of trauma. The DSM IV (APA, 1994) now includes fours groups of symptom clusters necessary for making the diagnosis of PTSD. Criterion A is exposure to a traumatic event. It is this criteria that precludes responders not exposed to the actual traumatic event that precludes them from getting this diagnosis despite potentially having clinically equivalent and significant symptoms as a primary trauma casualty. Criterion B is re-experiencing symptoms, for example "flashbacks." Criterion C is avoidance symptoms, such as persistent numbing. Criterion D is symptoms of heightened arousal, such as hyper vigilance.

Secondary Traumatic Stress-What is it? A Model for Transmission. The phenomenon of learning about another's traumatic ordeal and, in the process, experiencing traumatic stress is what Figley refers to as STS.[80] The STS is defined as "the natural, consequent behaviors and emotions resulting from knowledge about a traumatizing event experienced by a significant other. It is the stress resulting from helping or wanting to help a traumatized or suffering person."[80,p 10] The pathological response of being exposed to anthers traumata is called Secondary Traumatic Stress Disorder (STSD). The STSD is "a syndrome of symptoms nearly identical to PTSD except that exposure to knowledge about a traumatizing event is associated with a set of STSD symptoms."[80,p 8] The STS symptoms, or STSD, can occur when a system of at least two people is formed, one of whom has been traumatized and one of whom wants to help. Therefore, families, friends, mental health professionals, and other responders who work with traumatized people are vulnerable to STSD.

Theory

According to Figley's STS Theory, persons who work directly with or have direct exposure to trauma victims on a regular basis are just as likely as the primary victims to experience traumatic stress symptoms and disorders. "People can be traumatized simply by learning about the traumatic event."[80,p 4]

Other authors have studied and written about the effects of caring for trauma victims.[23,27,32,33,81] Pearlman and Saakvitne suggest that therapists who are exposed to "graphic descriptions of violent events, realities of people's cruelty to one another, and trauma related re-enactments" may suffer from vicarious traumatization.[29,p 31] "Vicarious traumatization is a process through which the therapist's inner experience is negatively transformed through empathic engagement with clients' trauma material."[29,p 279] Stamm proposes "care giving can be a stressful experience that may produce a situation ripe for a traumatic stress

response that may or may not lead to a traumatic stress disorder."[34, p xviii]

Adapted from Danieli's framework of multi-generational trauma, secondary trauma can be transmitted only after exposure to someone else's traumatic experience.[1] The responder's subsequent exposure to vicarious trauma causes a *rupture*, a possible regression, and a state of being "stuck" in this free flow, which is termed *fixity*. The time, duration, extent, and meaning of the trauma for the responder, the survival mechanisms used to adapt to it, and the contexts of the post-victimization traumata will determine the elements and the degree of rupture, the disruption, disorganization, disorientation, and the degree of fixity. The fixity may render the responder vulnerable, particularly to further trauma/ruptures, throughout the developmental life span. This model should be used to determine how to best systematically intervene. For example, the attack on the WTC not only ruptured continuity but also destroyed other existing supports for responders and primary victims alike. Danieli believes one of the issues facing interventions with multi-dimensional traumas is the ensuing conspiracy of silence between survivors and society and the culture of the responder, including military mental health professionals, that deprived them, their families, and their comrades of potential supports.[1]

The model calls for us to look at secondary trauma from a contextual standpoint. This means that the integration of trauma must take place in *all* of life's relevant dimensions and cannot be accounted for by the individual alone. To fulfill the reparative (individual and national, real and symbolic, unit members and leadership) and preventative goals of psychological recovery from trauma, perspective and integration through awareness and containment must be established so that one's sense of continuity, belongingness, and rootedness are restored.[82,83] For the U.S. Army Medical Department, this idea is consistent with its function as a force multiplier, returning as many soldiers to duty as possible. Healing and self actualizing can only begin when the integration of traumatic experiences is examined through the totality of the secondary trauma casualty's, family member's, and military community's lives.[1]

Need for the Study

Although there is a plethora of literature with anecdotal accounts of emergency responders and rescuers, including military responders, abandoning clinical or prevention activities because of the tremendous personal strain associated with it is unknown to what extent this attrition within the military is due to STS.[7] The experience of STS is hypothesized to be one reason why many human service professionals and emergency service personnel leave their services prematurely.[4] There are other implications and perhaps hidden effects related to these shortened careers. Beaton and Murphy identify short-term emotional and physical disorders, increases in inter-personal violence, increases in substance use and abuse, and lower productivity as costs of not addressing the unofficial but real syndrome of STS in responders.[17] As the first anniversary of the September 11th attacks approaches, victims of secondary stress have been seen mostly by Army family advocacy and drug and alcohol programs. It is our ethical duty as responders charged with force protection in the U.S. Army Medical Department that we prepare our clinicians for participation in and prevention and treatment of this occupational hazard.

In addition to having potentially impaired providers within the serve or loss of them to attrition, Danieli suggests there can be several generations affected by traumatic stress.[1] While Danieli's model speaks to intergenerational aspects of trauma transmission, it is plausible to hypothesize that providers can also pass this on as tertiary stress to their patients. At a minimum, traumatized clinicians may feel difficulty in performing the task of attending to their duties with patients after a disaster.[7] One of the goals of this investigation is to sensitize the military medical community to the extent of trauma and its contagion. Therefore, to effectively alleviate the negative effects of STS, more empirical research needs to be done. The following is a proposal to begin the process of researching the extent of the problems articulated thus far.

The Study Proposal

In the proposed study, our goal is to conduct an empirical investigation on the mental health effects of disasters on responders, and overcome past methodological limitations of previous investigations, leading to the development of assessment methods to identify characteristics and factors that predict negative outcome/responses in individual's post disaster.

Specific Aims

To explore the mental health effects in responders to disasters at 6 months and 12 months post-event. Military personnel who responded to the Pentagon Attack on 11 Sep 01, will be assessed and consists of males and females aged 18 to 65 who are members of the U.S. Army and U.S. Air Force.

Primary Specific Aims of this Study

To examine the mental health effects of the pentagon disaster on responders at 6 months and 12 months post event. Empirical systematic assessment of these variables will provide a longitudinal assessment of the impact on mental health in the 12 months following the disaster. It is hypothesized that responders will experience increased symptoms on measures of psychopathology including: anxiety, fear, stress/distress, PTSD, substance abuse, and family stress. In addition, responders will have increased physical/somatic complaints as measured on the General Health Questionnaire and assessments of stress and well-being.

To examine the relationship between individual characteristics of responders and intensity of psychopathology at 6 months and 12 months post disaster. We will examine responder characteristics including: duties at disaster, number of past disaster experiences, past psychosocial history, family history of PTSD, self-efficacy and the intensity of psychopathology post-disaster. It is hypothesized that responders who have past experiences working disasters, higher self-efficacy, and a negative social history and family history for stress and depressive disorders, will exhibit less psychopathology post disaster compared to responders with less experience, family history of depression, and less self-efficacy.

To explore the incidence rates and relative risk for developing negative symptoms in responders exposed to disasters. We will explore group and individual characteristics and their potential relationship to development of increased rates of stress, distress, and PTSD symptoms in responders compared to a group of nonresponders (military personnel who did not work the pentagon disaster). It is hypothesized that responders who worked at the pentagon disaster will have increased incidence rates of negative symptoms compared to the nonresponders.

Secondary Aim

To explore the effects on families and relationships of responders who work disasters. Responders who work disasters return home to their families, and are not properly integrated back into family home life. This dissonance leads to increases in family distress and disruption. It is hypothesized that responders will report increases in family distress and problems with integration to family life post-disaster.

Potential Selected Primary dependent measures to provide a very comprehensive examination of the problem.

- PTSD measure – Penn Inventory for PTSD
- Impact of events scale
- SCL-90-R general psychopathology
- Psychosocial history and family history
- Trauma history (crime, disaster, interpersonal) – Trauma History Questionnaire
- Self-efficacy/resilience – Life Experiences Survey
- Depression – Beck Depression Inventory
- Fear/anxiety – Perceived Stress Scale
- General Health Questionnaire – GHQ28
- Drug and Alcohol use questionnaire – I found a "Reasons for Increased Alcohol Use" set of questions from a UN questionnaire
- Family distress – Family Environment Scale
- Self-esteem and levels of social dysfunction – Coopersmith Inventory
- Secondary Traumatic Stress Scale

Discussion and Conclusion

Several questions could be asked pertaining to an investigation of STS. (1) Are STS symptoms related to exposure to traumatized populations? This investigation will mostly likely limit itself to this first question, as prevalence is the major focus of the proposed pilot study. However, given the number of incidents military mental health professionals are exposed over the course of their career, the next logical question would be (2) Are STS symptoms related to the responder's own trauma history ?[7] Other factors that could be examined empirically are years of military service, years of clinical experience, and the

unique characteristics of the responders personal background.

The primary assumption of this investigation and in the conceptualization of STS is that exposure to combat, operational, and disaster casualties may result in traumatic symptoms and syndromes in the responder. There is literature to substantiate this underpinning. Schauben and Frazier found that 148 psychologists and sexual violence counselors who had a higher caseload of trauma survivors on their caseloads reported more symptoms of trauma, reported more vicarious trauma, and had more cognitive disruptions than those providers without comparable caseloads.[53] Brady et al studied nearly 450 female clinicians and found those with the greatest exposure to cumulative cases of sexual abuse reported the highest trauma symptom picture.[84] Chrestman found that higher caseloads of trauma patients was associated with higher symptoms associated with anxiety disorders, such as higher levels of dissociation. And still another study by Kassam-Adams evaluated occupational stress symptoms and traumatic stress symptoms in relation to clinicians who treated sexual abuse.[6] Nearly 50% of the respondents reported high scores on the Impact of Events Scale which measures some of the symptoms that make up PTSD, such as intrusion and avoidance and that these symptoms persisted 1 year after exposure and over the course of the provider's career.[85] Finally, specifically to military responders, Munroe found that the combined effect of current and cumulative exposure to patients with combat-related PTSD was correlated to the clinicians trauma symptoms.[26]

Combat stress control and emergency response, because of its nature, has the potential to impact responders. The post-traumatic responses of providers are similar to those of the victims themselves in civilian response organizations. There is a need to assess the extent of this problem in the military emergency and mental health responder community.

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